

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 1-5 and 9-13 have been amended to improve their readability without narrowing their scope. Claims 18 and 19 have been added. Claims 1-19 are pending.

Allowable subject matter

Applicants appreciate the indication that claims 3-4 and 11-12 contain allowable subject matter. Applicants have not amended claims 3-4 and 11-12 at this time, because applicants believe that the independent claims from which claims 3-4 and 11-12 ultimately depend are allowable for the reasons discussed further below.

Claim objections

Claim 5 was objected to for informalities. Claim 5 has been amended to address the issue raised in the Office Action, and applicants submit that the objection has been overcome.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 9-17 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite.

With respect to the phrase “a light” in line 14 of original claim 9, applicants note that the full phrase in line 14 is “a light emission source”, which is recited for the first time in claim 9. Thus, there need not be antecedent basis for the “light emission source” in line 14 of original claim 9.

With respect to the phrase “the reflection surfaces and the mirror finished surfaces are alternately provided over almost entire of the light emission area” in claim 9, applicants submit that this phrase is clear and definite. Applicants note that claim 9 has been amended to recite that “a plurality of mirror finished surfaces that are arranged so as not to reflect the light emitted by the light emitting diode but to reflect an outside light incident from the lamp lens.” Thus, while the mirror finished surfaces function as a mirror and reflect light incident on their surfaces, the mirror finished surfaces are in a particular arrangement with respect to

the light emitting diode and the lamp lens such that they do not reflect light emitted by the light emitting diode but reflect an outside light incident from the lamp lens.

With respect to lines 17-21 of claim 9, applicants submit the recited phrase “each of the mirror finished surfaces is arranged on a segment that connects the light emission source of the light emitting diode to one of boundaries between the reflection surfaces and the mirror finished surfaces, or arranged on an opposite side to a light reflection direction of the reflection surfaces from the segment” is not redundant, but clearly defines the arrangement of the mirror finished surfaces as being on a segment (or on an opposite side), where that segment is defined as connecting the light emission source of the light emitting diode to one of the boundaries between the reflection surfaces and the mirror finished surfaces. As an aid to the Examiner in understanding this arrangement, applicants point to FIG. 14 and the accompanying text of the specification which describes one embodiment of claim 9 with mirrored finished surfaces 700 (710, 720 and 730).

Rejections under 35 U.S.C. § 103

Claims 1-2, 5-10 and 13-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,814,475 to Amano (“Amano”) in view of U.S. Patent No. 5,642,933 to Hitora (“Hitora”). Applicants respectfully traverse these rejections for at least the following reasons.

Independent claim 1 recites “a plurality of first reflection surfaces that reflect the light emitted by the first light emitting diode toward the lamp lens; and a plurality of second reflection surfaces that reflect light emitted by the second light emitting diode toward the lamp lens, wherein the first reflection surfaces and the second reflection surfaces are alternately provided over almost entire of the light emission area of the lamp lens.” (emphasis added). Amano and Hitora fail to disclose at least this feature of claim 1.

Amano discloses a first group of LED light sources 28 which emit light towards a first reflector 26 separated into sub reflectors 26A, 26B, 26C, 26D and 26E corresponding to the light sources 28 and fresnel lenses 32. Amano also discloses a second group of LED light sources 48, and corresponding second reflector 46 with subreflectors 46A-46E.

Amano, however, does not disclose the alternate arrangement of the first and second reflection surfaces as recited in claim 1. The Office Action equates the subreflectors 26c and 46c with the first and second reflection surfaces as claimed. The subreflectors 26c and 46c, however, do not have reflection surfaces which are in an alternate arrangement with each other.

Amano does disclose step portions 26r adjacent to reflective elements 26s of the reflectors 26A-26E. However, even if the step portions 26r were reflective and alternate with the reflective elements 26s, the step portions 26r are not arranged as either the first or second reflection surfaces of claim 1, because they are not arranged to reflect light emitted by any LEDs of the Amano device toward a lamp lens.

Hitora merely discloses reflection surfaces that are parabolic, but fails to cure the deficiencies of Amano.

Independent claim 9 recites “each of the mirror finished surfaces is arranged on a segment that connects the light emission source of the light emitting diode to one of boundaries between the reflection surfaces and the mirror finished surfaces, or arranged on an opposite side to a light reflection direction of the reflection surfaces from the segment.” Amano and Hitora fail to disclose at least this feature of claim 9.

As discussed above, Amano does disclose step portions 26r adjacent to reflective elements 26s of the reflectors 26A-26E. Even if the step portions 26r of Amano were mirror finished surfaces, however, they are not arranged in the manner recited in claim 9. Namely, the step portions 26r are not arranged on a segment that connects the light emission source of any of the LEDs 28 to a boundary between the reflective elements 26s and the step portions 26r, or on an opposite side to a light reflection direction of the reflection surfaces from such a segment.

Hitora merely discloses reflection surfaces that are parabolic, but fails to cure the deficiencies of Amano.

Moreover, one skilled in the art would not have modified Amano in view of Hitora in the manner suggested in the Office Action. With respect to the paraboloid shape of the claims, Hitora discloses that flat surfaces are preferred over parabolic (col. 4, lines 26-38), and thus teaches away from modifying Amano to include parabolic surfaces. Claims 1 and 9 are further patentable over Amano and Hitora for at least this reason.

The dependent claims are patentable for at least the same reasons as their respective independent claims, as well as for further patentable features recited therein. For example, applicant notes with appreciation the indication of allowable subject matter in claims 3, 4, 11 and 12.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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